Evaporative Humidifier / Cooler Nortec MH Series

Is a sustainable solution for both humidifying and cooling. Nortec's MH series is an evaporative humidifier based on the adiabatic principle that results in air humidifying and cooling. Its innovative design is specifically engineered for Air Handing Units (AHU) or ventilation duct systems and is a perfect compliment towards GREEN/LEED building design.

Model MHTC Flow Modulation

The water is not collected in the water tray in the case of the "flow" model, but rather flows directly into the drain. The low-energy Nortec MH evaporation humidifier/cooler is specially designed for integration in central air conditioning systems.

Nortec MH characteristics at a glance:

- Humidifier media box made of polyester free of glass fibre with an impressed V-Profile for an efficient and healthy way of humidifying and cooling
- Simple and uncomplicated installation
- Low installation and operational costs for short and long-term facility cost reductions
- Short water basin depth made of stainless steel material with multi-sided gradients for effective drying of the humidifier.
- Water management integrated in the MH control system unit for optimising water consumption and humidity control
- Operation for all water quality types: potable, softened, reverse osmosis (R/O) and fully-de-ionized (D/I) water
- Adiabatic evaporation cooling of over 21.5° F (12°C) can be achieved
- Ultra violet water treatment available

The electronic control is an integral part of the humidifier. It enables operation free of malfunctions and optimises control accuracy and water consumption.

The short stainless steel water tank depth will reduce on the overall footprint, saving valuable air handling real estate. There are lateral two guide tracks with suspension fixtures for the humidifier media boxes and mist eliminators to be easily installed. Integrated water management system consists of water distributors with flow regulators for setting consistent water flow volumes, a circulation pump, stainless steel water distribution hoods, electrical inlet valves, electrical step control valves and electronic control for optimum water efficiency and humidity control.

Humidifying Media Box

The core element of the MH series is the patented polyester media box located in the air duct. Dry air flows through the box, water flows over the hygroscopic media and the extremely large wet surface releases humidity to the air. This method enables air humidifying or cooling with substantially limiting the use of electrical energy.

The V-Profile humidifier box consists of a polyester material with an impressed V-Profile, which enables a more intensive exchange of air and water. The polyester box is free of glass fibre and is fire protected in compliance with UL 900 Class 1 certification. This not only makes it perfectly safe with regards to health, but also ensures a longer service life compared to the rational cellulose or fibre glass media.

V-Profile Media

Media Box

Key benefits of the innovative V-Profile humidifier media box:

- Low Pressure Drop
- Hygroscopic Coating
- UL 900 Class 1 Rating
- High Velocity Performance
- Suitable for all Water Quality
- No Droplets, Free of Aerosols

MHTC Total Control System

The MH control unit controls the humidity and governs the water management to maximize efficiency. The integrated processor with real-time clock controls the air humidity, pre-cleaning sequences, unit purging and water quality control, all fully automatically. The controller is designed for connection to building management systems (BMS). This means that parameters such as humidifying requirement, water consumption, maintenance requirement or operating hours can be transmitted further via modbus, LON Talk or BACnet with *LINKS2.*

The electronic control cabinet includes electrical fusing and main power switch.
One, two or three stage control through magnetic staging valves is available. Microprocessor PI-controlled analog humidity signals for flexibility. Controlled flushing of the water tank in function of the filling cycles or time controlled drainage through the integrated real time clock. Programmable wash cycle for cleaning the humidification media. Automatic flushing of the water lines at the end of a season shutdown or without a call for humidity. An automatic forced drain after shutdown periods longer than 72 hours, an interruption in humidifying requirement of over 72 hours or in the case of a power failure.

Total Control Management System

Key Benefits:

- Smart Water Management
- Advanced Hygiene Control
- Capable of Monitoring & Control via Internet or BMS
- Full Functional Operating Panel
- Adjustable Flush Cycles
- Pre-Cleaning Sequence
- Programmable Maintenance
- UV Sensing

Available Options and Accessories

UV water treatment

Pressure reduction valve (building side) consult factory
P/N 1329505 - In-Line Water filter c/w 5 micron filter

Nortec On/Off Controls:
P/N 1329203 - Switch Air Proving (duct airflow safety interlock)

Nortec Modulating Demand Controls:
P/N 25202660 - 10V Dig. Duct Humidistat pkg
P/N 15101420 - 10V Digital Wall Humidistat

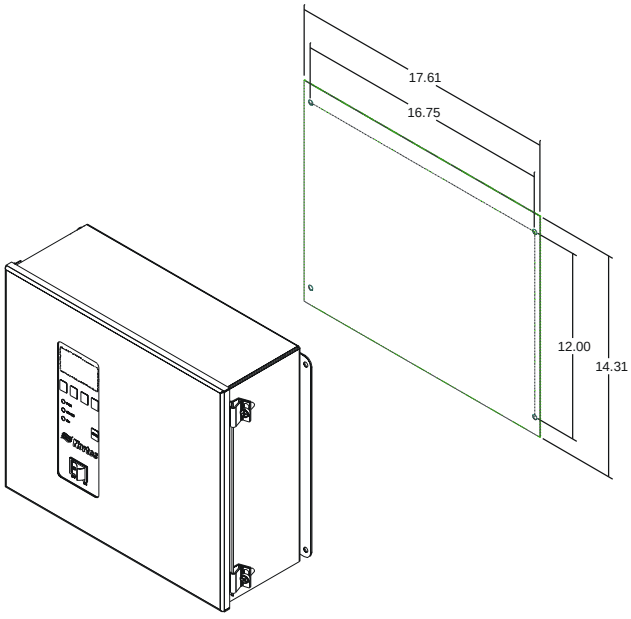
Nortec Transducer Sensor Controls:
P/N 1509858 - 2-10V Dig Wall Humidity Sensor
P/N 1509857 - 2-10V Duct Humidity Sensor

Nortec LINKS2 and Nortec Online please consult factory

MHTC Flow Technical data

Humidifying output	see performance data	
Power consumption w/UV	0.30 kW	
Power consumption w/o UV	0.20 kW	
Control voltage	120/1/60	V/Ph/Hz
Water mains pressure	30..145	psi
Water connection	3/4	"
Water drain	1 ½	“
Width/Height/Depth	See performance data	

Make	Nortec
Type	MHTC Flow
Manufacturer	Walter Meier Climate Canada Inc.



(TC) Total Controller System Mounting Dimensions

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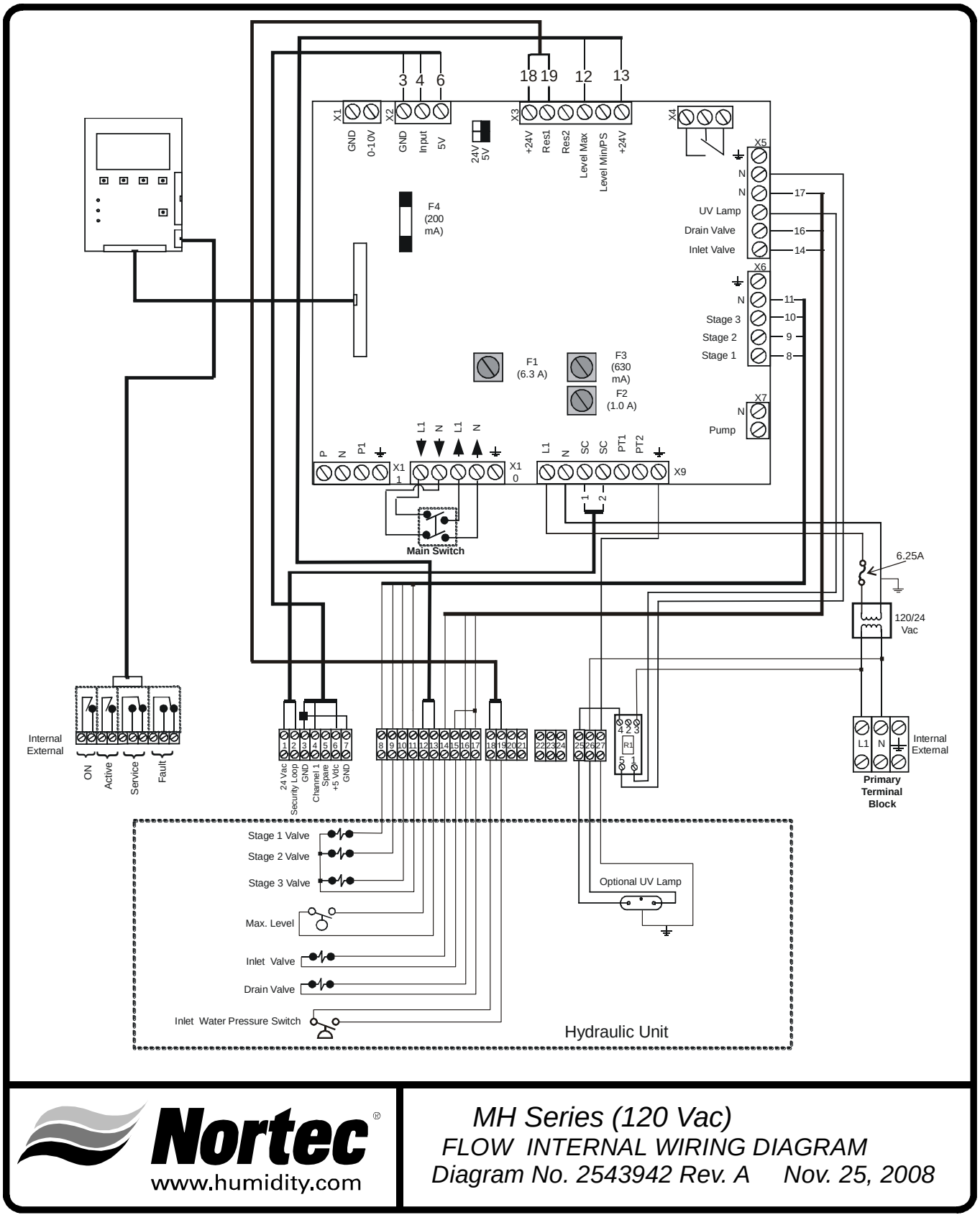
MH Wiring Diagram



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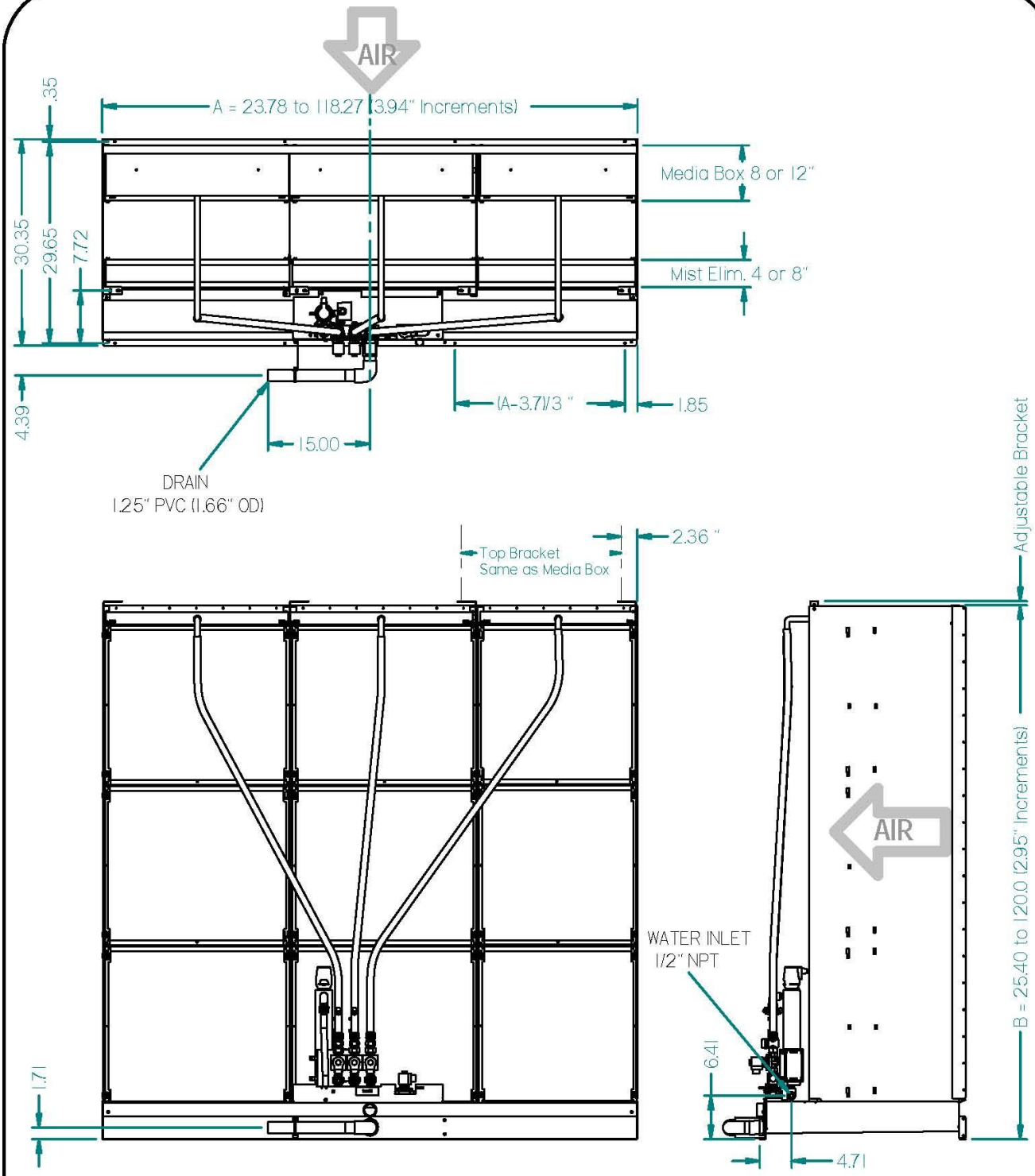
MH Series (120 Vac)
FLOW INTERNAL WIRING DIAGRAM
Diagram No. 2543942 Rev. A Nov. 25, 2008

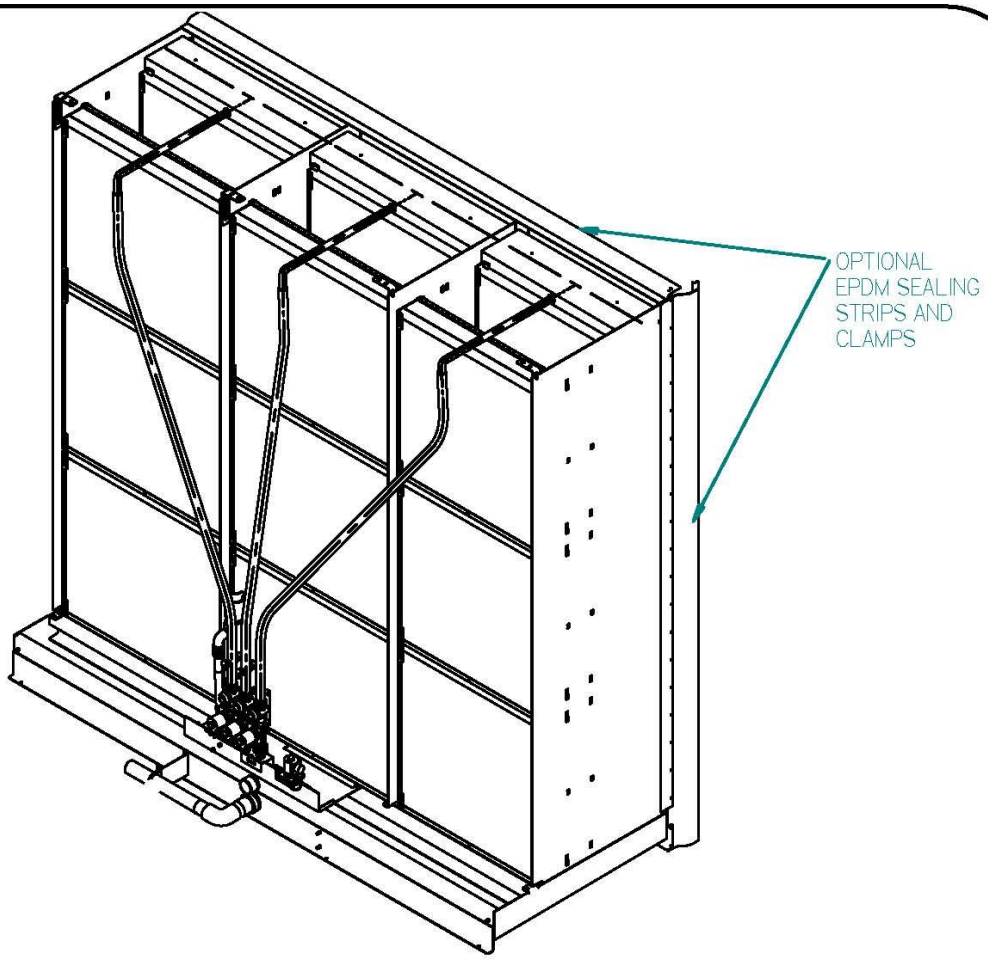
Nortec
www.humidity.com



Note: Up to 4" Front Clearance required for sealing around perimeter of frame with EPDM strips.

MH Flow (Shop Drawing)
Page 1

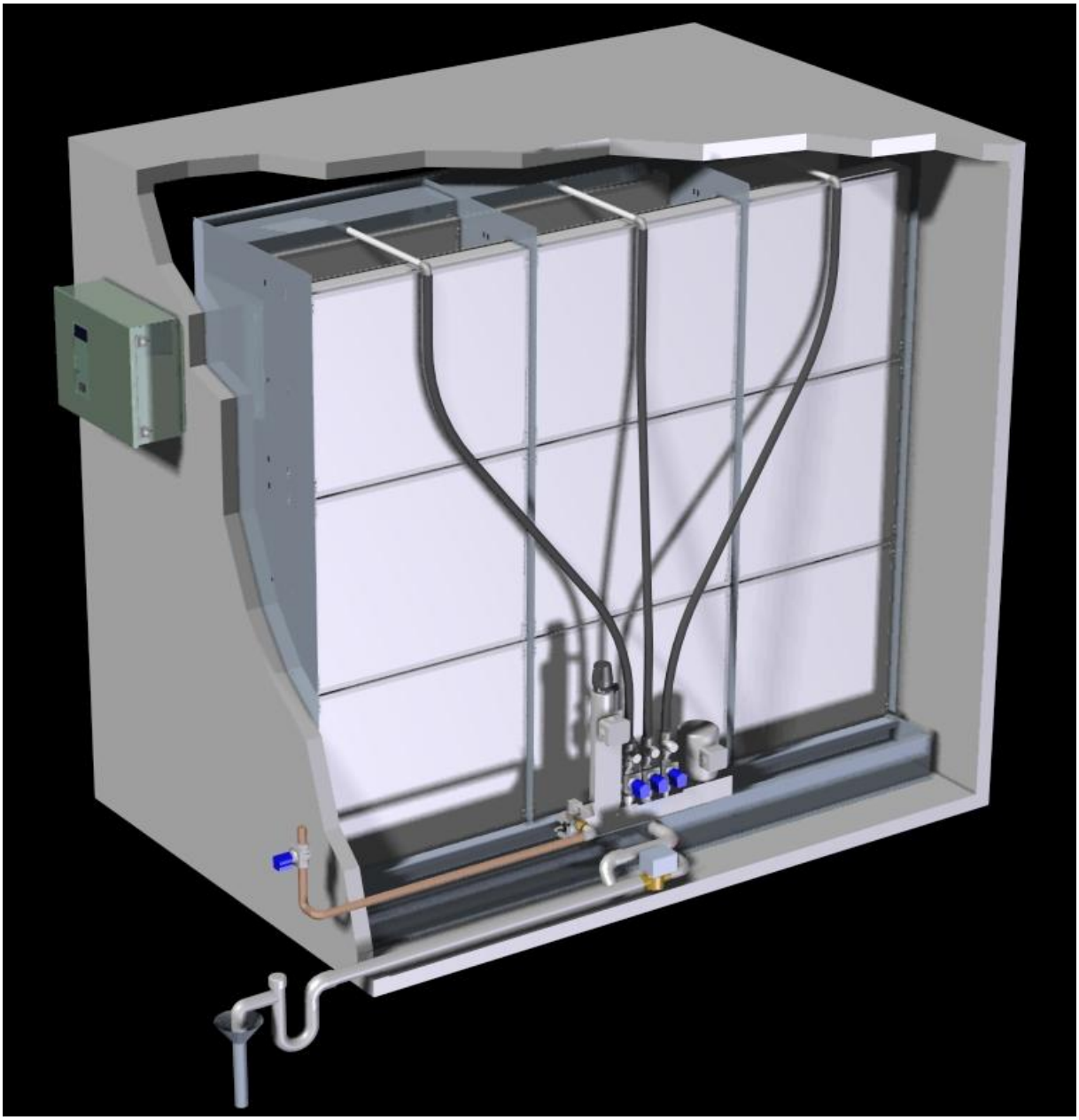
Nortec
WHEN YOU NEED HUMIDITY



Performance	
Media Box Efficiency	Up to 85% and 95%
Maximum Face Velocity	750 fpm (3.8 m/s)
Maximum Face Velocity with Integral Mist Eliminator	1080 fpm (5.5 m/s)
Pressure Drop at 500 fpm	0.25 IWC (62 pa)
Media Fire Protection Rating	UL 900 Class 1
Dimensions	
Unit Height	26" (650 mm) - 120" (3045 mm)
Unit Width	23.8" (635 mm) - 118.3" (3004 mm)
Unit Depth	36" (914 mm)
Power and Connections	
Reflow Pump Model	120 VAC/1,50/60 Hz
Control Voltage	24 VAC
Power Consumption	0.2 - 0.6 kW
Water Inlet	1/2" NPT
Drain Outlet	1.25" PVC (1.66" (42 mm) OD)
Water Supply Pressure	30-145 psi
Water Quality	Tap, softened, fully D/I (demineralized), or R/O (reverse osmosis)

Installation

Installation of the MH is simple and uncomplicated. The stainless steel water tank and lateral side supports can be integrated into a ventilation duct or air handling unit very quickly. The media boxes can be mounted in the simplest of manners and only three connections are needed, the supply inlet water valve, drain water valve and all electrical/control connections. The Flow model incorporates a 120V single phase connection.



Typical MH installation. Use as reference only. MHTC REflow shown.